

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

Claim 1 (previously presented): A semi-rigid viscoelastic foam made from a Part A composition and a Part B composition, said Part A composition comprising 20-50 weight percent isocyanate (NCO), said Part B composition comprising at least 20 parts by weight of amine-based polyether polyol having a propylene oxide extended tip, at least 10 parts by weight of an additional polyol selected from the group consisting of filled polyether polyols and unfilled polyether polyols, and 0.4-4 parts by weight catalyst, said Part A and Part B compositions being combined to provide said semi-rigid viscoelastic foam.

Claim 2 (previously presented): A semi-rigid viscoelastic foam made from a Part A composition and a Part B composition, said Part A composition comprising 20-50 weight percent isocyanate (NCO), said Part B composition comprising at least 20 parts by weight of amine-based polyether polyol having a propylene oxide extended tip, at least 10 parts by weight of an additional, tri-functional polyether polyol, and 0.4-4 parts by weight catalyst, said Part A and Part B compositions being combined to provide said semi-rigid viscoelastic foam.

Claim 3 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, having an index of 80-115.

Claim 4 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, having an index of about 90-100.

Claim 5 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said Part B composition further comprising about 3 parts by weight water.

Claim 6 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said Part B composition further comprising about 6 parts by weight black paste.

Claim 7 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said isocyanate in said Part A composition being present in the form of 4,4'-MDI:

Claim 8 (previously presented): A semi-rigid viscoelastic foam according to claim 7, said 4,4'-MDI being present in said Part A composition in an amount sufficient to provide an isocyanate (NCO) concentration of about 33.6 percent by weight.

Claim 9 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said isocyanate in said Part A composition being present in the form of an allophanate-modified MDI prepolymer, said part A composition having an isocyanate (NCO) concentration of about 20-30 percent by weight.

Claim 10 (currently amended): A semi-rigid viscoelastic foam according to claim 1 or 2, said amine-based polyol in said Part B composition being a mixture of polyols

comprising monoethanolamine based polyol in an amount of less than 10 parts by weight, triethanol amine based polyol in an amount of 10-30 parts by weight, and ethylenediamine based polyol in an amount of 16-36 parts by weight.

Claim 11 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said catalyst comprising amine catalyst in an amount of 0.4-2.5 parts by weight, delayed action catalyst in an amount of 0-1 parts by weight, and trimer catalyst in an amount of 0-1 parts by weight.

Claim 12 (previously presented): A semi-rigid viscoelastic foam according to claim 11, said amine catalyst being tertiary amine catalyst, said delayed action catalyst being a combination delayed action catalyst, said trimer catalyst being a quaternary ammonium salt trimer catalyst.

Claim 13 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said additional polyol being a glycerin based polyether polyol.

Claim 14 (previously presented): A semi-rigid viscoelastic foam according to claim 2, said tri-functional polyether polyol being a non-amine based polyether polyol.

Claim 15 (previously presented): A method of making a viscoelastic foam comprising the steps of:

a) providing a Part A composition comprising 20-50 weight percent isocyanate;

b) providing a Part B composition comprising at least 20 parts by weight amine-based polyether polyol having a propylene oxide extended tip, at least 10 parts by weight of a polyol selected from the group consisting of filled polyether polyols and unfilled polyether polyols, and 0.4-4 parts by weight catalyst; and

c) combining said Part A and Part B compositions to provide a semi-rigid viscoelastic foam having an index of 70-130.

Claim 16 (previously presented): A method of making a viscoelastic foam comprising the steps of:

a) providing a Part A composition comprising 20-50 weight percent isocyanate;

b) providing a Part B composition comprising at least 20 parts by weight amine-based polyether polyol having a propylene oxide extended tip, at least 10 parts by weight of a tri-functional polyether polyol, and 0.4-4 parts by weight catalyst; and

c) combining said Part A and Part B compositions to provide a semi-rigid viscoelastic foam having an index of 70-130.

Claim 17 (previously presented): A method according to claim 15 or 16, said semi-rigid viscoelastic foam having an index of 90-100.

Claim 18 (previously presented): A method according to claim 15 or 16, said Part B composition further comprising about 3 parts by weight water.

Claim 19 (previously presented): A method according to claim 15 or 16, said

Part B composition further comprising about 6 parts by weight black paste.

Claim 20 (previously presented): A method according to claim 15 or 16, said isocyanate in said Part A composition being present in the ~~from~~ form of 4,4'-MDI.

Claim 21 (original): A method according to claim 20, said 4,4'-MDI being present in said Part A composition an amount sufficient to provide an isocyanate (NCO) concentration of about 33.6 percent by weight in said Part A composition.

Claim 22 (original): A method according to claim 15 or 16, said isocyanate in said Part A composition being present in the form of an allophanate-modified MDI prepolymer.

Claim 23 (currently amended): A method according to claim 15 or 16, said amine-based polyol in said Part B composition being a mixture of polyols comprising monoethanolamine based polyol in an amount of less than 10 parts by weight, triethanol amine based polyol in an amount of 10-30 parts by weight, and ethylenediamine based polyol in an amount of 16-36 parts by weight.

Claim 24 (previously presented): A method according to claim 15 or 16, said catalyst comprising amine catalyst in an amount of 0.4-2.5 parts by weight, a delayed action catalyst in an amount of 0-1 parts by weight, and a trimer catalyst in an amount of 0-1 parts by weight.

Claim 25 (previously presented): A method according to claim 24, said amine catalysts being tertiary amine catalysts, said delayed action catalyst being a combination delayed action amine/delayed action tin catalyst, and said trimer catalyst being a quaternary ammonium salt trimer catalyst.

Claim 26 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said Part B composition further comprising 3-15 parts by weight black paste.

Claim 27 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, having an index of 70-130.

Claim 28 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said Part B composition having at least 40 parts by weight amine-based polyether polyol, wherein the amounts of all polyether polyols in said Part B composition sum to 100 parts by weight.

Claim 29 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, said foam being recoverable following a high energy impact.

Claim 30 (previously presented): A semi-rigid viscoelastic foam according to claim 29, said foam being substantially 100% recoverable following said high energy

impact.

Claim 31 (previously presented): A semi-rigid viscoelastic foam according to claim 1 or 2, wherein on impact with a flat circular impactor having a 4-inch diameter according to test method ASTM F2040, a sample of said foam measuring 5.5" x 5.5" x 1" thick exhibits breakthrough acceleration in the range of 100 to 150 g's for an impact speed of 2-6 meters/second.

Claim 32 (previously presented): A semi-rigid viscoelastic foam, said foam being made from a Part A composition and a Part B composition, said Part A composition comprising 20-50 weight percent isocyanate (NCO), said Part B composition comprising water, at least one catalyst and each of the following, all in parts by weight:

1-15 parts monoethanolamine-based polyol,

6-25 parts triethanolamine-based polyol,

22-40 parts ethylenediamine-based polyol,

0-50 parts filled polyol, and

0-50 parts unfilled polyol;

wherein said Part B composition includes at least one of said filled or unfilled polyols.

Claim 33 (new): A semi-rigid viscoelastic foam according to claim 32, all the amine-based polyols being propylene oxide extended.

Claim 34 (new): A semi-rigid viscoelastic foam according to claim 32 or 33, said

filled and unfilled polyols each being glycerin-based and at least tri-functional.

Claim 35 (new): A semi-rigid viscoelastic foam according to claim 34, said part B composition comprising 20-30 parts by weight unfilled polyol and 20-30 parts by weight filled polyol.

Claim 36 (new): A semi-rigid viscoelastic foam according to claim 35, said foam having an index of 80-115.

Claim 37 (new): A semi-rigid viscoelastic foam according to claim 1, 2, 32 or 33, said part B composition comprising 40-60 parts by weight total amine-based polyol out of 100 parts by weight total polyols.

Claim 38 (new): A semi-rigid viscoelastic foam according to claim 37, said part B composition comprising 20-30 parts by weight unfilled polyol and 20-30 parts by weight unfilled polyol.

Claim 39 (new): A semi-rigid viscoelastic foam according to claim 38, said filled and unfilled polyols each being glycerin-based and at least tri-functional.

Claim 40 (new): A semi-rigid viscoelastic foam according to claim 1, 2, 32 or 33, said foam being an energy absorbing foam capable to provide effective attenuation of dynamic impact forces for impact speeds in the range of 2-6 meters/second,



wherein at the upper end of said range said foam exhibits comparable or lower breakthrough acceleration, measured in g-values, than conventional expanded polystyrene under the same conditions,

and wherein at the lower end of said range said foam exhibits lower breakthrough acceleration, measured in g-values, than conventional expanded polystyrene under the same conditions.